



MOST 20-2B

MOBILE OXYGEN STORAGE TANK (MOST)

OPERATIONS AND SERVICE MANUAL

Including

ILLUSTRATED PARTS BREAKDOWN

MODEL MOST 20-2B

PART NUMBER – 793080-002*



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Additional Patents Pending

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SAFETY SUMMARY

The following are general safety precautions that are not related to any specific procedure and therefore do not appear elsewhere in this technical manual. These are general safety precautions and instructions that people must understand and apply during many phases of operation and maintenance to ensure personal safety and health and the protection of Government property.

Throughout this manual you will see three types of notations which contain special information:

NOTE: Provides additional information that may be helpful in performing a specific task.

 **WARNING:** Provides information about conditions which require special attention and precautions to avoid serious injuries.

 **CAUTION:** Provides information about conditions which require special attention and precautions to avoid equipment damage.

Be sure to read the information in the notes, cautions, and warnings carefully, and consult someone experienced in handling oxygen equipment about any issues that are unclear. Additional safety guidelines related to specific components of the MOST are described in the appropriate chapters.

DANGEROUS PRESSURES

Care must be taken during operation to ensure that all fittings are proper and tight. All system components must be compatible with pressure applied. Personnel must be protected by a minimum of safety glasses when transfilling or repairing.

WORKING WITH OXYGEN

Oxygen used in the medical profession can be very hazardous. Although oxygen does not burn, it does support combustion. A Material Safety Data Sheet is available at Pacific Consolidated Industries.

Oxygen systems must be properly cleaned and inspected in accordance with Compressed Gas Association pamphlet G-4.1 prior to use to ensure that no combustible materials remain in the connecting piping and fittings. If you are not familiar with oxygen cleaning procedures contact the


Compressed Gas Association or Pacific Consolidated Industries prior to putting oxygen into your piping and distribution system. The Compressed Gas Association's web site is www.cganet.com. Observe strict cleanliness procedures when fabricating and connecting the oxygen piping.


Only operate the oxygen equipment in a well-ventilated area.


GUIDELINES FOR HANDLING CYLINDERS


While the principal function of the MOST is to provide gaseous oxygen for medical use, conventional oxygen cylinders are still an integral part of the method for supplying backup oxygen and for mobile oxygen requirements (for example, on board ambulances).

Oxygen cylinders are under extremely high pressure (as much as 2,250 psi) and present a number of associated hazards as a result.

 **WARNING:** The sudden release of this pressure, whether by puncture, dropping, or loss of pressure can easily turn the cylinder into a projectile hurtling across the ground and through the air. Take extreme care when filling cylinders and when handling charged cylinders.

 **WARNING:** Do not drag or slide cylinders or lift them by the pressure cap; this may damage the cylinders and cause the sudden release of, cylinder pressure. Use a suitable hand truck, forklift, roll platform, or similar device to move cylinders.

 **WARNING:** Do not drop cylinders or permit them to strike against each other or other surfaces; this may damage the cylinders and cause the sudden release of cylinder pressure. Firmly secure cylinders during moving and transport.

 **WARNING:** Do not fill cylinders too rapidly. Excessive heat may build up in the gas and result in a failure of the seals in the cylinder valves and possible ignition.



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! WARNING: Periodically check the surface temperature of the cylinders during charging operations. Allowing excessive heat to build up in the gas will result in a failure of the seals in the cylinder valves and possible ignition.

! WARNING: Never shut off a line without verifying that a suitably rated relief valve or bleed off valve has been installed between the two shutoff valves. Failure to do so can result in a rupture of the line and possible ignition.

! WARNING: Never charge cylinders with oxygen that are marked for other gases. Always check the cylinder markings and ensure that only cylinders marked for oxygen are charged with oxygen. Failure to do so can result in contamination of the patient oxygen supply.

SAFE PRACTICES FOR HANDLING AND OPERATING OXYGEN EQUIPMENT

Oxygen used in the medical profession can be very hazardous. Although oxygen does not burn, it does support combustion. A material, which will not burn in air, may burn in a high-pressure pure oxygen - such as the metal in oxygen regulators or cylinders. Some general guidelines for minimizing the chance of fire are provided below:

STORAGE, MAINTENANCE AND HANDLING

- Do not allow smoking around oxygen.
- Store oxygen in clean, dry locations and away from direct sunlight.
- Do not allow valves, regulators, gauges, and fittings to come into contact with oils, greases, organic lubricants, rubber or any other combustible substance.
- Make sure that any cleaning, repair or transfilling of oxygen equipment is performed by qualified, properly trained staff.
- Do not work on oxygen equipment with ordinary tools. Designate special tools, clean them and store them for "Use With Oxygen Equipment Only".
- Use plugs, caps and plastic bags to protect "off duty" equipment from dust and dirt.

USE

- Make sure that personnel using oxygen equipment are adequately trained in its operation and in oxygen safety and have knowledge of manufacturer's instructions for using the equipment.
- Open the cylinder valves slowly and completely to minimize the heat produced and achieve the desired flow conditions within the equipment.

! WARNING: Composite cylinders require Hydrostatic Testing at five (5) year intervals. Check Hydrostatic Test plate prior to filling to ensure cylinders testing is current. Relief Valves require testing at (2 to 3) year intervals to ensure accuracy.

NOTE:

IT IS RECOMMENDED THAT THE TESTING BE PERFORMED AT THE PCI FACILITY

HYDROSTATIC TESTING

Cylinders must be re-inspected and hydrostatically retested at least once every five years. Testing must be performed in accordance with DOT-CFFC-13 tested to 5/3 of the marked service pressure, 49 CFR S 180.205, the latest edition of CGA pamphlet C-6.2, and DOT-E 13250.

CERTIFIED TESTING STATION

The testing facility must be approved under DOT 49 CFR-180.205, part 1, part 107.



MOST 20-2B

SECTION I

1-1 INTRODUCTION

The MOST 20-2B of P/N 793080-002 references the fact that the cylinder liner is made of brass and is designated for 2,250 psi fill pressure.

1-1.1 Indications For Use

The Mobile Oxygen Storage Tank (MOST) is intended to provide USP 93% (+7%/-3%) oxygen at 50psig nominal pressure for supplemental oxygen use only.

1-1.2 Mobile Oxygen Storage Tank (MOST)

The MOST was initially designed to meet the demands of the mobile medical oxygen delivery/transport. The availability of transportable medical oxygen is a prime factor in aiding trauma patients.

Initially, oxygen demand was met by use of high-pressure steel oxygen cylinders. Cylinders satisfied the requirement for oxygen but created unacceptable logistical burdens associated with transportation, refill, and storage.

The introduction of the liquid oxygen based systems reduced the size and weight of the oxygen delivery equipment and replaced many applications previously filled with the oxygen cylinders, but created additional problems. Liquid oxygen cannot be stored. It must remain below -297°F to stay in a liquid state and it rapidly boils off losing as much as 5% per day. Transportation over long distance results in a high percentage of loss.

There is an urgent need for an oxygen transportation system that can be stored and stockpiled, ready for immediate use, transported with the medical unit and totally self sufficient for as long as required. It also has to be easy to operate dependable and as small and light as possible. The Mobile Oxygen Storage Tank (MOST) has been developed to address these requirements.

1-2 SYSTEM OVERVIEW

The Mobile Oxygen Storage Tank (MOST) is a storage and distribution system consisting of lightweight, high strength, high-pressure composite wound brass lined cylinders secured within a rugged case. The MOST contains 10,000 liters of oxygen when filled to 2,250 psig. The MOST has a maximum flow capability of 150 lpm at 50 psig (50 lpm per Oxygen Output fitting).

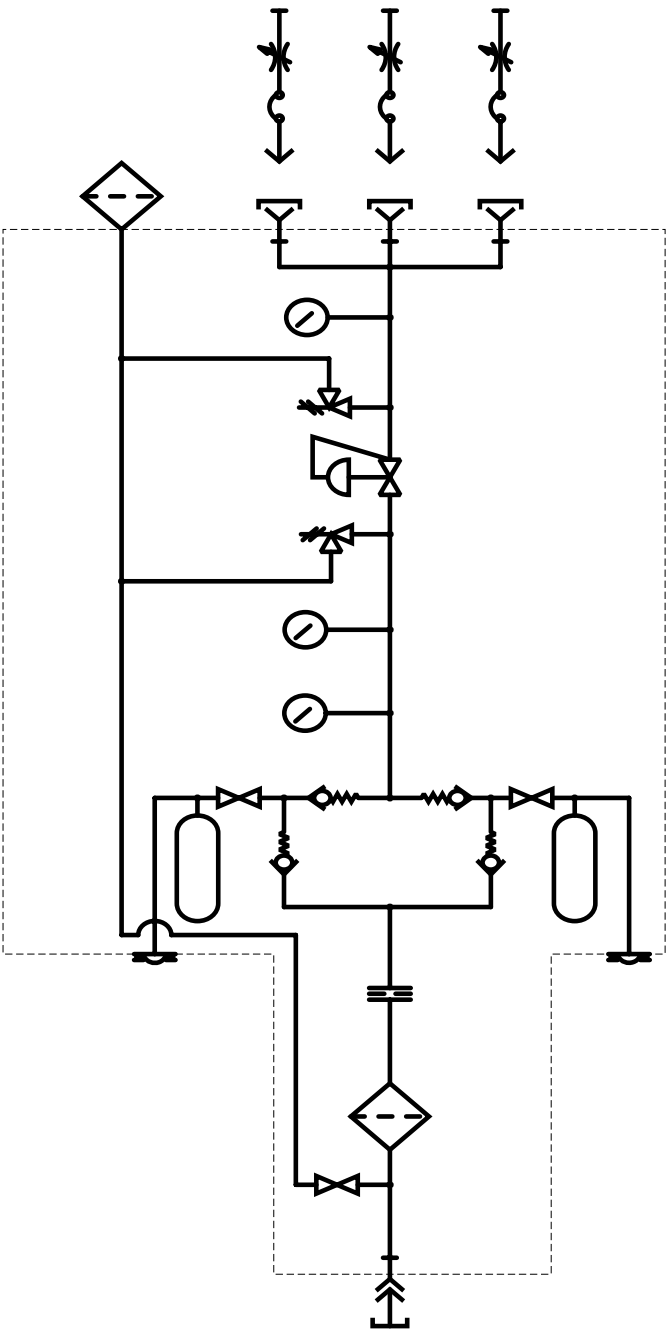
The operating panel on the end of the unit contains the following:

- One high pressure Oxygen Input fitting is provided for filling the MOST from various high-pressure sources.
- A Cylinder Contents Gauge indicates the cylinder pressure (both cylinders combined).
- Three Oxygen Output fittings are provided to attach the Oxygen Conducting Delivery Hose(s) that supply oxygen to the patients.
- An Output Pressure Gauge indicates the output pressure of the oxygen.

A Cylinder Contents Gauge (P1-1) is provided on the long side of the case. This pressure gauge is marked in liters indicating the liters of oxygen remaining in the MOST. It is placed in this position to allow reading of the remaining capacity from either the side or the end of the unit. When filled to 2,250 psig, the MOST contains 10,000 liters of oxygen (See Fig 1-1).



Cylinder Contents Gauge
Figure 1-1



F-2

0-100 PSI

0-5000 PSI 0-5000 PSI

MOST P&ID Schematic
Figure 1-2



MOST 20-2B

Tag No	Description	PCI Part No
ADP-1	ADAPTER- CGA540 TO HP QUICK CONNECT - ST. STL	790510-012
BD-1	BURST DISK - 3300 PSI – BRASS/MONEL	582388-004
BD-2	BURST DISK - 3300 PSI – BRASS/MONEL	582388-004
C-1	SERVICE CONNECTOR – SCHRADER FEMALE QUICK CONNECT ST. STL	581706-001
C-2	SERVICE CONNECTOR – SCHRADER FEMALE QUICK CONNECT ST. STL	581706-001
C-3	SERVICE CONNECTOR – SCHRADER FEMALE QUICK CONNECT ST. STL	581706-001
C-4	FILL CONNECTOR – SWAGELOK HP FEMALE QUICK CONNECT	581438-019
CV-1	MINIMUM PRESSURE CHECK VALVE – 10 PSIG – ST. STL	7905674-036
CV-2	MINIMUM PRESSURE CHECK VALVE – 5 PSIG – ST. STL	7905674-045
CV-3	ISOLATION CHECK VALVE – 1 PSIG – ST. STL	7905674-044
CV-4	ISOLATION CHECK VALVE – 1 PSIG – ST. STL	7905674-044
CYL-1	STORAGE CYLINDER – BRASS LINED – 2250 PSI – 1.09 CU. FT	582515-001
CYL-2	STORAGE CYLINDER – BRASS LINED – 2250 PSI – 1.09 CU. FT	582515-001
F-1	FILTER – SINTERED STAINLESS STEEL	581530-007
F-2	FILTER – SINTERED BRONZE VENT SCREEN	581677-002
FCV-1	FLOWMETER – 0-15 LITERS	792975-001
FVC-2	FLOWMETER – 0-15 LITERS	792975-001
FVC-3	FLOWMETER – 0-15 LITERS	792975-001
OR-1	ORIFICE - .047 INCH DIA. – STAINLESS STEEL	581996-008
PI-1	PRESSURE GAUGE – CYLINDER – 0-5000 PSI - BRASS	793674-039
PI-2	PRESSURE GAUGE – CYLINDER – 0-5000 PSI - BRASS	793674-039
P1-3	PRESSURE GAUGE – DELIVERY – 0-100 PSI - BRASS	793674-038
PRV-1	PRESSURE REDUCING VALVE - BRASS	792993-001
RV-1	RELIEF VALVE – CYLINDER – 2360 PSI – STAINLESS STEEL	791756-501
RV-2	RELIEF VALVE – DELIVERY PRESSURE – 60 PSIG - STAINLESS STEEL	793503-602
V-1	SHUTOFF VALVE – CYLINDER - BRASS	793674-047
V-2	SHUTOFF VALVE – CYLINDER - BRASS	793674-047
V-3	VENT VALVE - BRASS	793674-047

MOST P&ID Tag Listing
Table 1-1



MOST 20-2B

Eight handles, two on each long side of the MOST and two on the top at each end, are provided for ease of transportation.

The exterior dimensions of the MOST are:

Length	37.25"
Width	27.25"
Height	15.50"

The MOST weighs approximately 200 pounds fully charged to 2,250 psig.

Operating Temperature: -40°F to 140°F

1-3 APPARATUS KIT

The MOST contains an Apparatus Kit, which includes the equipment required to distribute the oxygen to up to three patients concurrently. To access the Apparatus Kit unlatch the MOST top cover and tilt it to the up position.

The Apparatus Kit contains:

- Three Oxygen Conducting Delivery Hose(s), 20 feet long wound on individual holders. One end of the hose has a quick connect fitting that attaches to the Oxygen Output connector on the MOST Operating Panel. Shown on Figure 4-2, Item 5. The other end of the hose has a fitting that attaches to the Flow Selector.
- Three Flow Selectors receive the oxygen from the Oxygen Conducting Delivery Hose(s) at 50 psig. The Flow Selector regulates the output flow from each output. The Flow Selectors are adjustable in quantities of 0.0, 0.5, 1, 2, 3, 4, 5, 6, 8, 10, and 15 lpm.



MOST 20-2B

SECTION II

2-1 FUNCTIONAL DESCRIPTION

2-2 MOST OPERATING PANEL

The MOST Operating Panel contains the connecting port necessary to refill the MOST with high-pressure oxygen and the fittings necessary to provide distribution of the oxygen. A valve (V-3) in the filling circuit allows the release of pressure in the vent position. Without a vent position, the full cylinder pressure would be constantly on the fitting, making it impossible to remove or insert the quick connect hose fitting. The operating Panel includes two pressure gauges.

The Cylinder Contents Gauge (P1-1), indicates the pressure of the remaining oxygen and therefore the remaining quantity of oxygen. The Output Pressure Gauge indicates the pressure of the oxygen being supplied to the Oxygen Output Fittings and Hoses. Three quick connect Oxygen Output ports and one quick connect Oxygen Input port are located in the center of the panel. A vent port for the internal pressure relief devices is also located on this panel (See Fig 4-2).

2-3 OXYGEN OUTPUT

Prior to attaching an Oxygen Hose to the MOST, the Flow Selector must be placed on the opposite end of the Oxygen Hose. The correct end has a small hand wheel to assist the connection of the hose to the threaded fitting on the end of the Flow selector, which is marked "INLET". Ensure that the Flow Selector is set to "0" before connecting to the hose.

There are three Oxygen Output quick connecting ports on the MOST Operating Panel. Each port is equipped with a protective plug attached to the panel by a lanyard. The protective plug should always be in place when the respective output fitting is not being used. The Oxygen Output fittings are used to connect the tapered end of the Oxygen Conducting Delivery Hose(s) to the MOST. Pressure is applied on the hose as it is inserted into the fitting. When fully engaged, the hose fitting is captured by the output fitting. The oxygen is then free to flow through the hose. The hose is released by grasping the fitting mounted on the panel and twisting the fitting in a clockwise direction. A one quarter turn will release the hose fitting.

2-4 OXYGEN INPUT

The MOST high-pressure composite wound cylinders are designed for an operating pressure of 3,000 psig.

The MOST was designed as a functional component of the Expeditionary Deployable Oxygen Concentration System (EDOCS-120). The EDOCS-120 generates 120 liters per minute (lpm) of USP 93% oxygen at 100 psig. It can also deliver 60 lpm at 2,250 psig to fill the MOST. Each EDOCS-120 is equipped with a stainless steel high-pressure hose that may be used to connect the EDOCS-120 to the Oxygen Input fitting on the MOST Operating Panel. There is no shut off valve or flow adjustment valve located on the panel. In order to release the fittings the filling valve must be turned to the 'vent' position.

Although the MOST was designed for use with the EDOCS-120, GOX Carts, H-Cylinders or any other sources of USP grade oxygen may also be used. The EDOCS-120 can deliver USP grade oxygen at 93% while the latter systems can deliver USP grade oxygen between 90 to 100%

IDENTIFICATION LABEL




MOST 20-2B
Figure 2-1



SECTION III

3-1 OPERATING INSTRUCTIONS


 **WARNING:** Ensure no flames or sparking devices are in the immediate area. Ensure Oxygen Delivery Hose, Flow Selector, and Oxygen Output connections are clean and free of debris. Use only authorized cleaning procedures.


1. Open top lid of case to access accessories.
2. Remove Oxygen Conducting Delivery Hose(s) and Flow Selectors as required.
3. Inspect hoses for visual cracks, kinks, abrasion, etc. Do not use if damaged.
4. Unwind hose from reel, unthread hose end from reel fitting and return reel to storage tray.
5. Remove caps from flow control ports and replace caps in tray.
6. SLOWLY OPEN the Cylinder Shutoff Valves (V-1 & V1-2).
7. Check Output Pressure Gauge. Pressure should read 50 psi \pm 5 psi. Re-adjust if required. To adjust the regulator if it is out of range, open case and turn the tee handle on top of the regulator (RV-2) until it is back in range. NOTE: The regulated pressure cannot exceed the relief valve which is set at 60 psi. If the pressure is set above the relief valve setting it will result in loss of product.
8. Close top lid of case and secure MOST in desired position.
9. Connect Flow Selector to Oxygen Delivery Hose. Ensure Flow Selector is closed (set to 0).
10. Remove the Access Panel.
11. Remove protective cap on Oxygen Outlet Port.
12. Connect a Oxygen Delivery Hose to each Oxygen Output Port on MOST (C-1, C-2 & C-3). Ensure that the Quick Connect Fittings are fully engaged and captured.
13. Attach desired patient interface equipment to the Flow Selector.
14. Adjust flow control on Flow Selectors to prescribed level.


CAUTION: Flow selector MUST be connected in line prior to connecting the Delivery Hose to the MOST OUTLET PORT.

15. After Use Steps:

- Rotate collar on the output fitting to remove hose.
- Replace plugs on outlet fittings.
- Disassemble hose and flow controls.
- Place caps on flow controls.
- Open lid to retrieve Reels.
- Attach the hose to the reel fittings.
- Rewind hose on reel, secure with Velcro strap.
- Return hoses and flow controls to tray.

 **WARNING:** Discontinue use when cylinder pressure is less than 50 psi.

 **WARNING:** When utilizing patient interface equipment (cannula, mask, ventilator), refer to interface equipment operations manual for proper usage.

 **CAUTION:** Flow selector MUST be connected in line prior to administration of oxygen.



MOST 20-2B

SECTION IV

4-1 FILLING INSTRUCTIONS



WARNING: Fill the MOST with high purity oxygen conforming to OXYGEN, USP. Ensure no flames or sparking devices are within a 50 ft radius of MOST or the High Pressure Supply (No Smoking).

Filling of the MOST should be conducted outdoors. Ensure High Pressure Oxygen Supply Line and Oxygen Input Port connections are clean and debris free.

Use only authorized cleaning procedures. Connections contaminated with oils or hydrocarbons can easily initiate a fire.

Always open the oxygen valves slowly to minimize the compression heating problem.



WARNING: Composite cylinders require Hydrostatic Testing at five (5) year intervals. Check Hydrostatic Test plate prior to filling to ensure cylinders testing is current.

1. Ensure hands are clean or wear lint free clean gloves.
2. Ensure High Pressure Oxygen Source is SHUT OFF.
3. Ensure Venting Valve is in VENT position. See Figure 4-2.
4. Disconnect all hoses from the Oxygen Outlet Connectors.
5. SLOWLY OPEN the Cylinder Shutoff Valves. See Figure 4-1.
6. Remove protective plug on Oxygen Input Port.
7. Attach high-pressure oxygen source hose between the source device and the MOST oxygen input port (use Adaptor fitting if required).
8. SLOWLY turn the Venting Valve on MOST to the CLOSED position (See Figure 4-2).
9. VERY SLOWLY OPEN the High Pressure Oxygen Supply valve on source device. The MOST will begin filling at a rate of approximately 200 psi/minute.
10. Do not exceed fill pressure of 2,250 psi as indicated by the cylinder contents gauge.
11. When filling is complete, CLOSE the High Pressure Oxygen Supply Valve at source device.
12. Switch Venting Valve (V-3) to VENT position. (Oxygen will briefly vent through Vent Port)

13. Remove High Pressure Oxygen Supply Hose from Oxygen Input port (C-4).
14. Switch Venting Valve to CLOSE position.
15. Replace protective cap on Oxygen Input port.
16. SLOWLY CLOSE the Cylinder Shutoff Valves.



(Shutoff Valves)

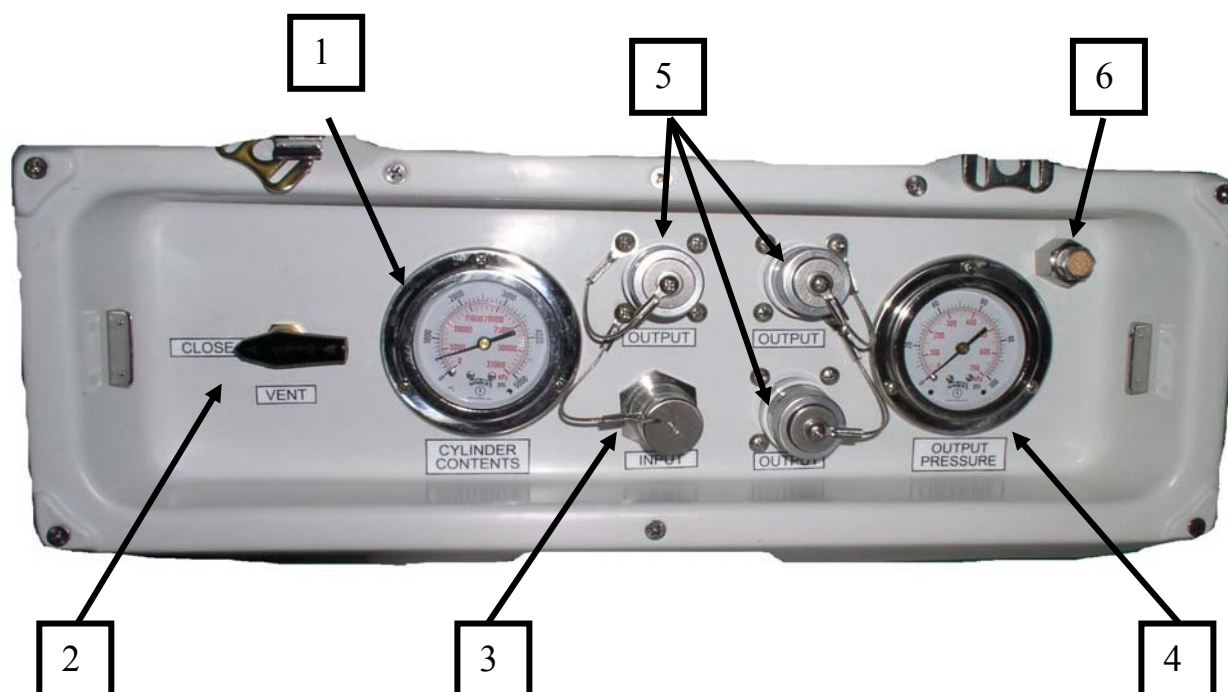
Cylinder Shutoff Valves V-1 & V-2

Figure 4-1

Note: Close shutoff valves for long-term storage



MOST 20-2B



MOST Operating Panel
Figure 4-2

ITEM	DESCRIPTION
1	CYLINDER CONTENTS GAUGE P1-1: Direct reading of the pressure in all cylinders. Pressure automatically equalized between cylinders.
2	VENT VALVE V-3: Controls release of pressure from filling circuit. When filling the valve is set to close and when venting is set to vent.
3	OXYGEN INPUT C-4: High pressure, self-sealing, quick disconnect fitting for refilling MOST cylinders.
4	OUTPUT PRESSURE P1-3: Direct reading gauge showing oxygen pressure being delivered to the three OXYGEN OUTPUT ports.
5	OXYGEN OUTPUT C-1, C-2 & C-3: Self-sealing, quick connect fittings for connection of the green oxygen delivery hoses.
6	VENT F-2: Vents excess pressure from RV-1, RV-2 and V-3



MOST 20-2B

SECTION V

5-1 MAINTENANCE INSTRUCTIONS FOR MOST 20-2B

5-2 GENERAL INFORMATION

This section contains instructions essential for maintenance of the MOST 20-2B Mobile Oxygen Storage Tank.



WARNING: Do not use oil, or any material containing oil, with oxygen equipment. Oil, even in a minute quantity, coming in contact with oxygen can increase the potential of explosion or fire. Dust, lint and fine metal particles are also dangerous.

5-3 MAINTENANCE

5-3.1 Tools and Equipment.

Only common tools are required to maintain the MOST 20-2B. The tools must be oxygen safe, non-sparking and oil free.

5-3.2 Service Life.

The MOST 20-2B can remain in service for 5 years before the cylinders need to be tested. All other components of the unit can remain in service as long as they continue to function.

5-4 USER MAINTENANCE

5-4.1 Hoses and Hose Connectors.

- Prior to use, inspect hoses for cracks, kinks cuts, etc. Replace any damaged hoses.
- Check all hoses and quick connectors for evidence of foreign particles and oil. Oxygen clean all surfaces that have contamination. Use only approved USAF cleaning solvents and procedures.
- Always keep protective covers on the quick disconnect fittings when hoses are not connected.
- Attach supply hoses to the hose reel assemblies and rewind. Stow them in the pockets provided in the accessories tray.

5-4.2 General Maintenance.

- Clean interior of MOST 20-2B assembly with a clean, dry, oil and lint free cloth.
- Secure the caps on the flow control valve inlets and outlets. Stow the valves in the pockets in the accessories tray.
- Check filter (F-1). Remove filter cover with appropriate open ended wrench. If found contaminated, replace element. If not dirty re-install. Vent Valve (V-3) must be in the Vent position prior to performing this operation.

5-4.3 Unscheduled Maintenance.

If any components are found to be non-operable or defective, repair or replace the component.

5-5 GENERAL INSPECTION

Inspect the MOST 20-2B at least once a month. When performing general inspections, check the following items.

- Check the case assembly for dents, gouges, missing fasteners or other damage.
- Check the handles, latches, hinges and dolly wheels for smoothness of operation, damage and proper function.
- Check the pressure gauges for cracked or broken glass.
- Check the quick connecting ports for general condition, for smooth and positive action, freedom from contamination, that the dust covers are installed and for cleanliness of the surrounding area.
- Check the flow control valves for cleanliness and for smooth operation throughout the adjustment range.
- Check the oxygen hoses for end fitting condition, excessive hose wear and flexibility, obvious physical damage and cleanliness.
- Check the accessories tray contents for three flow control valves, three oxygen hoses on racks and one (-5) 37° flare-to-high pressure quick connect adapter fitting.
- Check the tubing and fittings for tightness and leaks. Use oxygen compatible soap solution for checking for leaks.



MOST 20-2B

- i. Check that the burst disk protective covers are in place.
- j. Check the vent valve for smoothness of operation. Check that the handle is not loose.

5-6 TESTING OF THE FLOW CONTROL VALVE

Note: The flow control valve delivery rates cannot be adjusted but the rates can be verified for accuracy.

To verify the flow control valve rates perform the following procedures.

- a. Fill a MOST 20-2B to the proper pressure or use an already filled unit. Optionally follow the instructions in step (i).



WARNING: The sequence in steps (b.) through (d.) must be followed to preclude release of oxygen at pressure from an unrestricted hose outlet.

- b. Assemble a tee fitting between a supply hose outlet and a flow control valve. Add a master gauge with a 0-100 psig range to the tee fitting.
- c. Using a short piece of tubing, connect a rotameter capable of reading from 0 to 20 liters per minute (LPM) to the valve outlet.
- d. Set the flow control valve to the “0” flow rate position.
- e. Insert the supply hose male quick disconnect into one of the output quick disconnect fittings on the MOST 20-2B panel.
- f. Observe that the master pressure gauge remains within the 50±5 psig during the gas flow. To adjust the regulator if it is out of range, open case and turn the tee handle on top of the regulator (RV-2) until it is back in range. Close case and continue. NOTE: The regulated pressure cannot exceed the relief valve which is set at 60 psi.
- g. Set the flow control valve at each of the flow positions and establish that the rotameter reading is comparable to the flow tolerances as shown in Table 5-1.

- h. Replace any flow control valve that does not perform to the values in Table 5-1.
- i. An alternate test method may be employed by substituting for the MOST 20-2B a cylinder of oxygen per MIL-PRF-27210G with a pressure regulator and gauge in line to the flow control valve and rotameter.

VALVE POSITION	FLOW- SLPM OXYGEN
0	NO LEAKAGE
2	2.35-1.68
4	4.59-3.47
6	6.88-5.17
8	9.17-6.89
10	11.47-8.61
15	17.21-12.92

Flow Control Valve Flow Rate at 50±5 psig.
Table 5-1



MOST 20-2B

SECTION VI

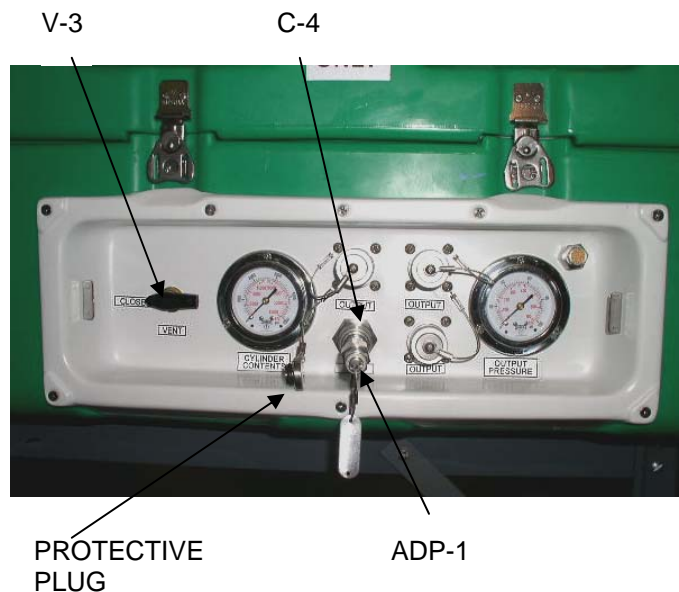
6-1 TRANSFILLING THE MOST

6-2 PURPOSE

The MOST can be filled from the following devices: EDOCS-120, GOX Carts and 'H' Cylinders or other sources of USP grade gaseous oxygen. Table 6-1 shows the capacity achievable by transfilling under various scenarios. The 'H' Cylinders are assumed to be at 2,250 psig and the values in the table are approximate.

'H' Cyl Qty	MOST Initial Pressure- psig	Final Pressure- psig	MOST Oxygen Capacity- Liters
1	Empty	940	4230
	250	1080	4850
	500	1230	5490
	750	1370	6130
	1000	1520	6780
	1500	1810	8070
2	Empty	1330	5930
	250	1430	6370
	500	1530	6820
	750	1630	7270
	1000	1730	7730
	1500	1940	8640
4	Empty	1670	7440
	250	1730	7710
	500	1800	8000
	750	1850	8280
	1000	1920	8570
	1500	2050	9140
6	Empty	1820	8130
	250	1870	8330
	500	1920	8540
	750	1970	8750
	1000	2010	8960
	1500	2110	9370
8	Empty	1915	8530
	250	1950	8680
	500	1990	8850
	750	2025	9010
	1000	2060	9180
	1500	2140	9500

Table 6-1 Capacity of MOST20-2B After Transfilling.



MOST Operating Panel
Figure 6-1

6-3 TRANSFILLING PROCEDURE

Unless otherwise specified, refer to Figure 6-1 MOST Operating Panel.

- Position the high pressure quick connect vent valve (V-3) to the vent position.
- Remove the protective plug from the high pressure input quick connecting port (C-4). Install the transfilling adapter fitting (ADP-1), part number 790510-012, into the quick connect fitting. Ensure that the adapter fitting is firmly engaged by the quick connect fitting by pulling on the fitting.
- Place the MOST on an elevated surface such as a work bench or table. Position the 'H' cylinder as close to the control panel as possible.
- Connect one end of a clean conductive hose assembly to the 'H' cylinder shutoff valve and the other end of the pigtail to the transfilling adapter. Tighten the fitting securely.



MOST 20-2B

NOTE:

The hose assembly must be rated for maximum working pressure of the supply source. The length of the hose assembly should be sufficient to allow connection between the 'H' cylinder and the MOST 20-2B without kinking of the hose.

- e. Position the high pressure quick connect vent valve (V-3) to the closed position.
- f. Slowly open the shutoff valve on the 'H' cylinder. The MOST cylinders will begin filling at a rate of about 200 psig per minute.

NOTE:

The MOST incorporates a restrictor orifice (OR-1) that limits the filling rate to a maximum of 200 psig per minute. No special regulators or valves are required to accomplish a safe transfilling of the MOST.

- g. When the pressure stops rising in the MOST, close the shutoff valve on the 'H' cylinder.
- h. Open the vent valve (V-3) on the MOST panel.
- i. If further transfilling is required, disconnect the hose from the filling source and reconnect it to the next filling source. Otherwise, remove the hose from the MOST, remove the transfilling adapter, ADP-1, and install the protective plug on the high pressure quick connect fitting, (C-4).



MOST 20-2B

SECTION VII

ILLUSTRATED PARTS BREAKDOWN

MOBILE OXYGEN STORAGE TANK

MODEL MOST 20-2B

PART NUMBER – 793080-002*



* Protected under US Patent No. 2004-0226381-A1
Additional Patents Pending

PACIFIC CONSOLIDATED INDUSTRIES

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MOST 20-2B

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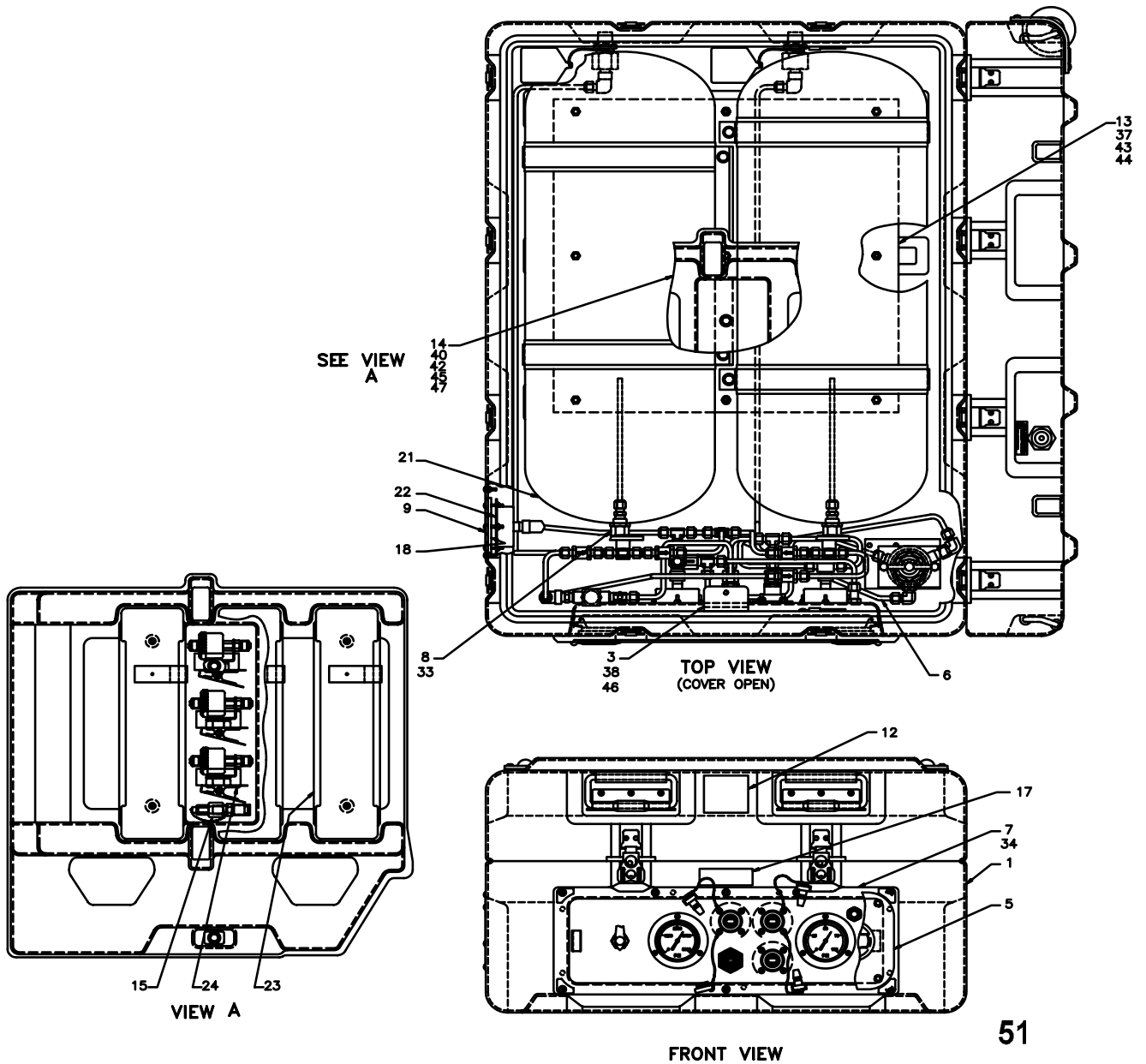
MOST 20-2B

Figure & Index No.	Part Number	FSCM	Description	Units Per Assy.	SMR Code	Usable On Code
7-1	793080-002	75906	ASSEMBLY-B, BRASS CYL (GREEN)....	REF	PEFFFU	
-1	793253-003	75906	. CASE, FABRICATED-GREEN.....	1		
-2	793881-001	75906	. LABEL, CAUTION.....	1		
-3	793255-001	75906	. BRACKET, ANGLE.....	1		
-4	792993-001	75906	. REGULATOR ASSY, PRESSURE.....	1		
-5	793257-001	75906	. DOOR ASSY, PANEL.....	1		
-6	793259-001	75906	. TUBING ASSY.....	1		
-7	793270-001	75906	. PANEL ASSY.....	1		
-8	793288-002	75906	. FITTING, CYLINDER.....	2		
-9	793437-001	75906	. LABEL, CYLINDER CONTENTS.....	1		
-10	793456-001	75906	. LABEL, INSTRUCTIONS, OPER.....	1		
-11	793463-001	75906	. COVER ASSY, BURST DISC.....	1		
-12	793475-002	75906	. LABEL, Rx ONLY.....	1		
-13	793854-001	75906	. PLATE ASSY, MTG, CYL.....	1		
-14	793855-001	75906	. TRAY, ACCESSORIES.....	1		
-15	790510-012	75906	. ADAPTOR ASSEMBLY.....	1		
-16	793503-602	75906	. VALVE, RELIEF.....	1		
-17	793475-001	75906	. LABEL, GROUND USE ONLY.....	1		
-18	793258-001	75906	. WINDOW, GAUGE.....	1		
-19	793495-002	75906	. NAMEPLATE.....	2		
-20	4591K12	3A054	. TAPE, THREAD SEAL.....	AR		
-21	CB3200-1BLA	3B4S7	. CYLINDER, COMPOSITE.....	2		
-22	793674-039	75906	. GAUGE, PRESSURE.....	1		
-23	792980-001	75906	. HOSE ASSEMBLY.....	3		
-24	792975-001	75906	. FLOWMETER ASSY.....	3		
-25	CD13539	25515	. DISC HOLDER.....	2		
-26	8026250	25515	. DISC, BURST....TAG # BD1 & 2.....	2		
-27	50C-0021-0014	19062	. HOSE RACK ASSEMBLY.....	3		
-28	¼ HHP-B	30780	. PLUG, PIPE, SOC HD.....	1		
-29	141	56501	. NUT, LOCK, ELEC.....	1		
-30	5262	56501	. SEAL, ELEC.....	1		
-31	MS17830-06C	96906	. NUT, LOCK, REG- 6 - 32 unc.....	4		
-32	3-908V747-75	02697	. O-RING, SEA- 08.....	2		
-33	MS51957-31	96906	. SCREW PAN HD -6 -32 unc x .62.....	4		
-34	MS51960-69	96906	. SCREW, FLT HD- 10 - 32 unf x 1.00.....	8		
-35	MS51957-34	96906	. SCREW, PAN HD- 6 -32 unc x 1.00.....	3		
-36	MS51958-65	96906	. SCREW, PAN HD- 10 - 32 unf x .75.....	2		
-37	92949A540	3A054	. SCREW, BUTTON HD .25 -20 unc x .75..	11		
-38	MS35307-306	96906	. BOLT, HEX HD- .25 -20 unc x .75.....	2		
-39	MS21044-C3	96906	. NUT, LOCK, REG- 10 -32 unf.....	2		
-40	MS35307-313	96906	. BOLT, HEX HD- .25 -20 unc x 1.75.....	1		
-41	MS35307-316	96906	. BOLT, HEX HD- .25 - 20 unc x 2.50.....	2		
-42	MS35307-332	96906	. BOLT, HEX HD- .312 - 18 unc x .75.....	1		
-43	MS17830-4C	96906	. NUT, LOCK, REG- .25 - 20 unc.....	9		
-44	MS15795-810	96906	. WASHER, FLAT- .281 ID.....	11		
-45	MS15795-812	96906	. WASHER, FLAT-.344 ID.....	2		
-46	MS35338-139	96906	. WASHER, LOCK- .225 ID.....	2		
-47	MS35338-140	96906	. WASHER, LOCK- .318 ID.....	2		
-48	MS17830-06C	96906	. NUT, LOCK, REG- 6 - 32 unc.....	7		
-49	MS21044-C3	96906	. NUT, LOCK, REG- 10 -32 unf.....	2		
-50	MS17830-4C	96906	. NUT, LOCK, REG- .25 - 20 unc.....	9		
-51	5613-250R-62	86928	. WASHER, FLAT- .281 ID (NEOPRENE).	2		

Table 7-1, BOM (Ref. Figure 7-1)



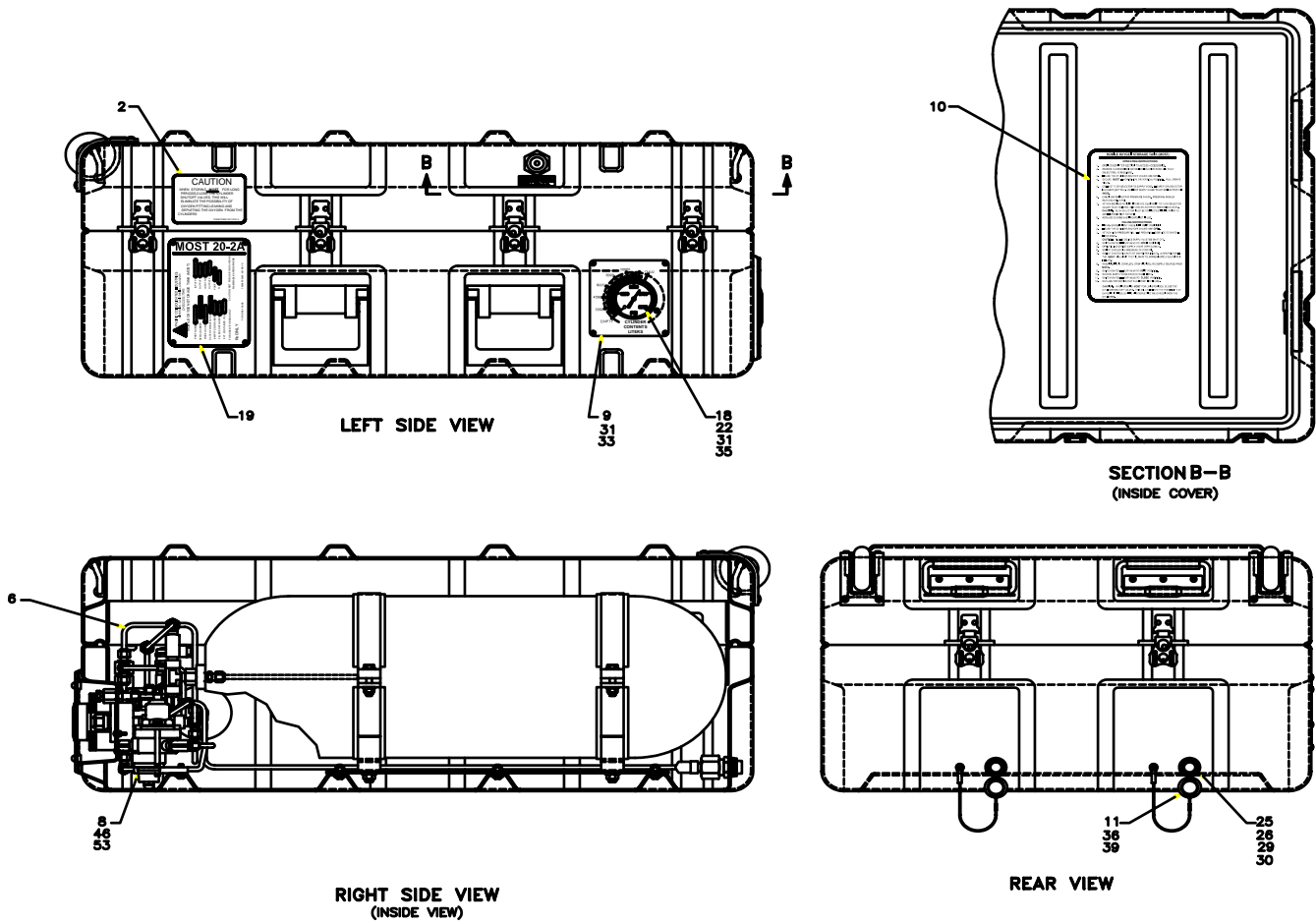
MOST 20-2B



Medical Oxygen Storage Tank. MOST
Figure 7-1



MOST 20-2B



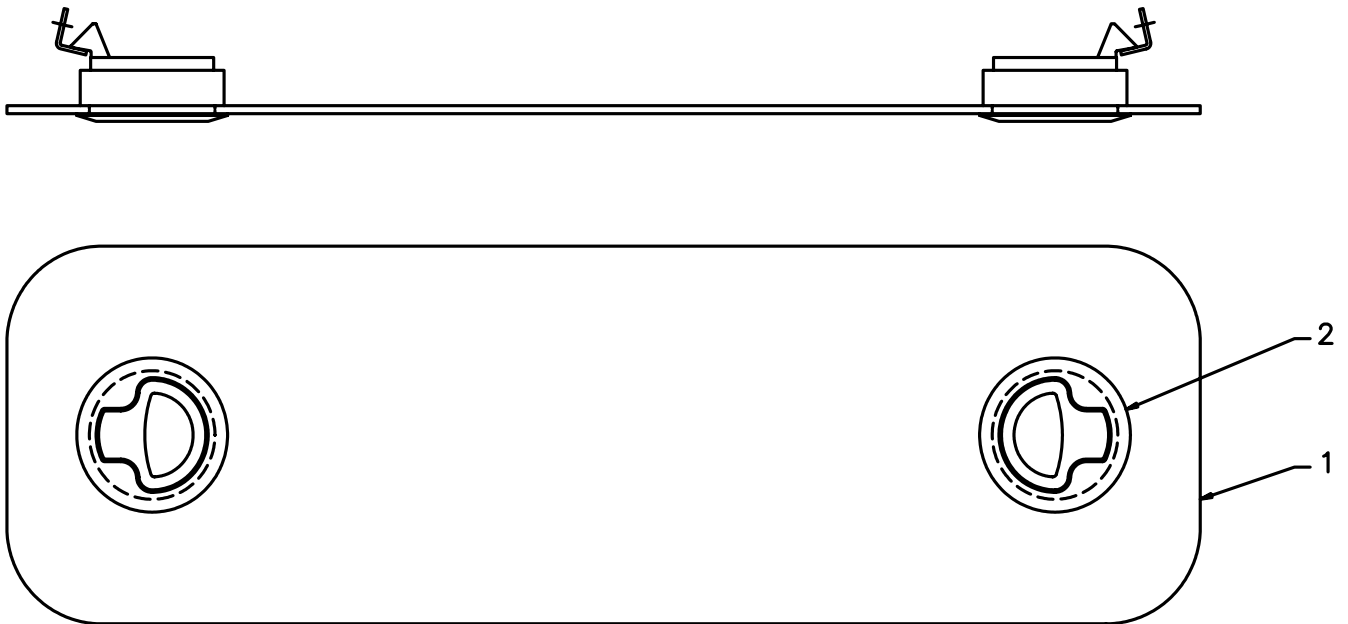
Medical Oxygen Storage Tank. MOST
Figure 7-1.1



MOST 20-2B

Figure & Index No.	Part Number	FSCM	Description	Units Per. Assy.	SMR Code	Usable on code
7-2	793257-001	75906	DOOR ASSY, PANEL.....	REF		
-1	793257-003	75906	. DOOR PANEL.....	1		
-2	M1-61-1	94222	. LATCH, FLUSH PULL.....	2		

Table 7-2, BOM (Ref. Figure 7-2)



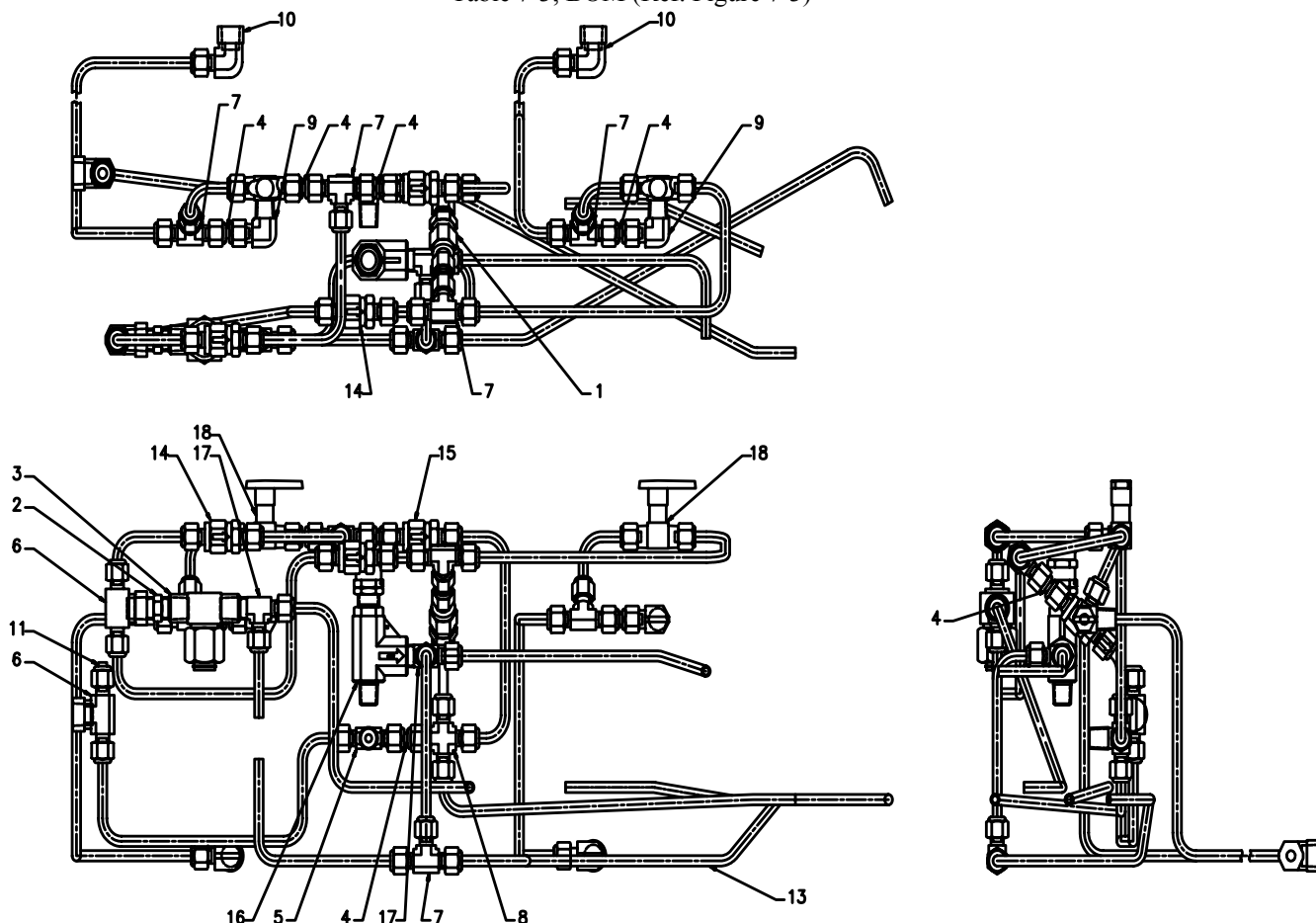
Door Assembly, Panel.
Figure 7-2.



MOST 20-2B

Figure & Index No.	Part Number	FSCM	Description	Units Per. Assy.	SMR Code	Usable on Code
7-3	793259-001	75906	TUBING ASSEMBLY.....	REF		
-1	793674-036	75906	. VALVE, CHECK, 10 PSI.....	1		
-2	E-47-SS	02880	. ORIFICE, .047 diameter.....	1		
-3	SS-4FT4-40	18034	. FILTER, HIGH PRESSURE.....	1		
-4	SS-401-PC	02570	. CONNECTOR, PORT.....	6		
-5	SS-400-3-4TTM	02570	. TEE, BRANCH, MALE.....	1		
-6	SS-400-3-4TTF	02570	. TEE, BRANCH, FEMALE.....	2		
-7	SS-400-3	02570	. TEE, UNION.....	5		
-8	SS-400-4	02570	. CROSS UNION.....	1		
-9	SS-400-2-4	02570	. ELBOW, MALE.....	2		
-10	SS-400-8-4	02570	. ELBOW, FEMALE.....	2		
-11	SS-400-P	02570	. PIPE, FITTING.....	2		
-12	4591K12	3A054	. TAP, THREAD, SEAL- .50 wide...	AR		
-13			. TUBING- .25dia x .035 W.....	215 IN		
-14	793674-044	75906	. VALVE, CHECK, 1 PSI.....	2		
-15	793674-045	75906	. VALVE, CHECK, 5 PSI.....	1		
-16	791756-501	75906	. VALVE, RELIEF 2360 PSI.....	1		
-17	SS-400-3-4TMT	02570	. TEE, RUN, MALE.....	2		
-18	793674-047	75906	. VALVE, BALL .187 ORIFICE.....	2		

Table 7-3, BOM (Ref. Figure 7-3)



Tubing Assembly.
Figure 7-3



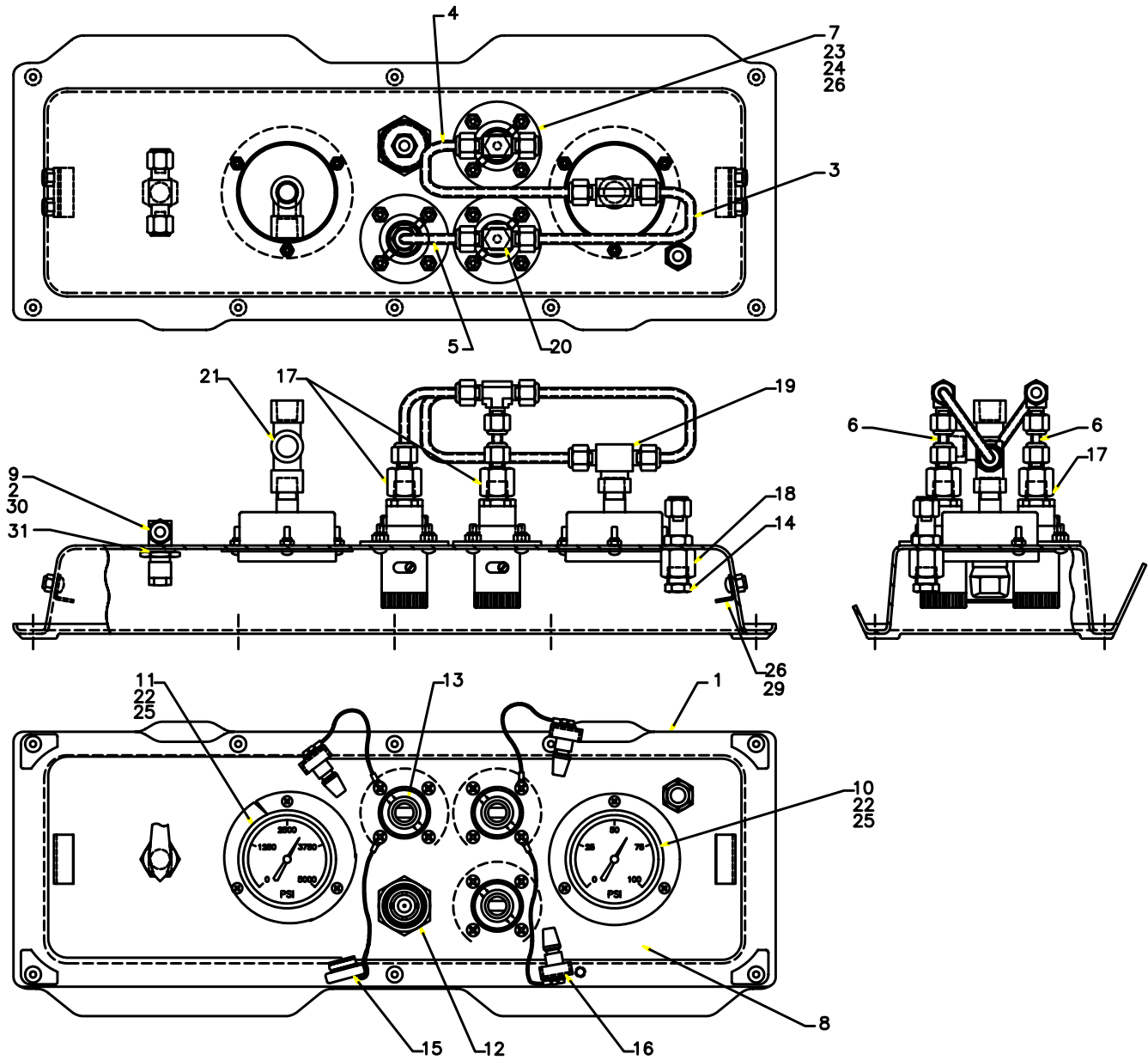
MOST 20-2B

Figure & Index No.	Part Number	FSCM	Description	Units Per. Assy.	SMR Code	Usable on Code
7-4	793270-001	75906	PANEL ASSEMBLY.....	REF		
-1	793269-001	75906	. PANEL.....	1		
-2	SS-403-1	02570	. FERRULE, FRONT.....	2		
-3	793261-002	75906	. TUBE, BENT.....	1		
-4	793261-003	75906	. TUBE, BENT.....	1		
-5	793261-004	75906	. TUBE, BENT.....	1		
-6	793261-005	75906	. TUBE.....	2		
-7	793122-001	75906	. FLANGED HOLDER.....	3		
-8	793273-001	75906	. KIT, LABEL, PANEL.....	1		
-9	793674-041	12623	. VALVE, BALL.....	1		
-10	793674-038	75906	. GAUGE, PRESSURE, 0-100 PSI.....	1		
-11	793674-039	75906	. GAUGE, PRESSURE, 0-5000 PSI.....	1		
-12	SS-QTM2A-B1-400K1	02570	. COUPLING, QC.....	1		
-13	6153	OUK87	. CHECK UNIT, SCHRADER.....	3		
-14	9833K22	3A054	. BREATHER, FILTER, VENT.....	1		
-15	793464-001	75906	. PLUG ASSEMBLY, PROTECTOR.....	1		
-16	793465-001	75906	. PLUG ASSEMBLY, PROTECTOR.....	3		
-17	SS-400-7-4	02570	. CONNECTOR, FEMALE.....	3		
-18	SS-400-71-4	02570	. CONNECTOR, FEMALE, BLKHD.....	1		
-19	SS-400-3-4TTF	02570	. TEE, BRANCH, FEMALE.....	1		
-20	SS-400-3	02570	. TEE, UNION.....	2		
-21	SS-4-T	02570	. TEE, PIPE, FEMALE.....	1		
-22	MS51957-31	96906	. SCREW, PAN HD.....	6		
-23	MS51958-64	96906	. SCREW, PAN HD.....	12		
-24	MS51023-49	96906	. SCREW, SET.....	6		
-25	MS17830-06C	96906	. NUT, LOCK. REG.....	6		
-26	MS21044-C3	96906	. NUT, LOCK. REG.....	12		
-27	4591K12	3A054	. TAPE, THREAD SEAL.....	AR		
-28	4538K1	3A054	. SEALANT, THREAD.....	AR		
-29	MS51958-61	96906	. SCREW, PAN HD.....	4		
-30	SS-404-1	02570	. FERRULE, BACK.....	2		
-31	5714-378-063	86928	. WASHER, FLAT.....	1		

Table 7-4, BOM (Ref. Figure 7-4)



MOST 20-2B



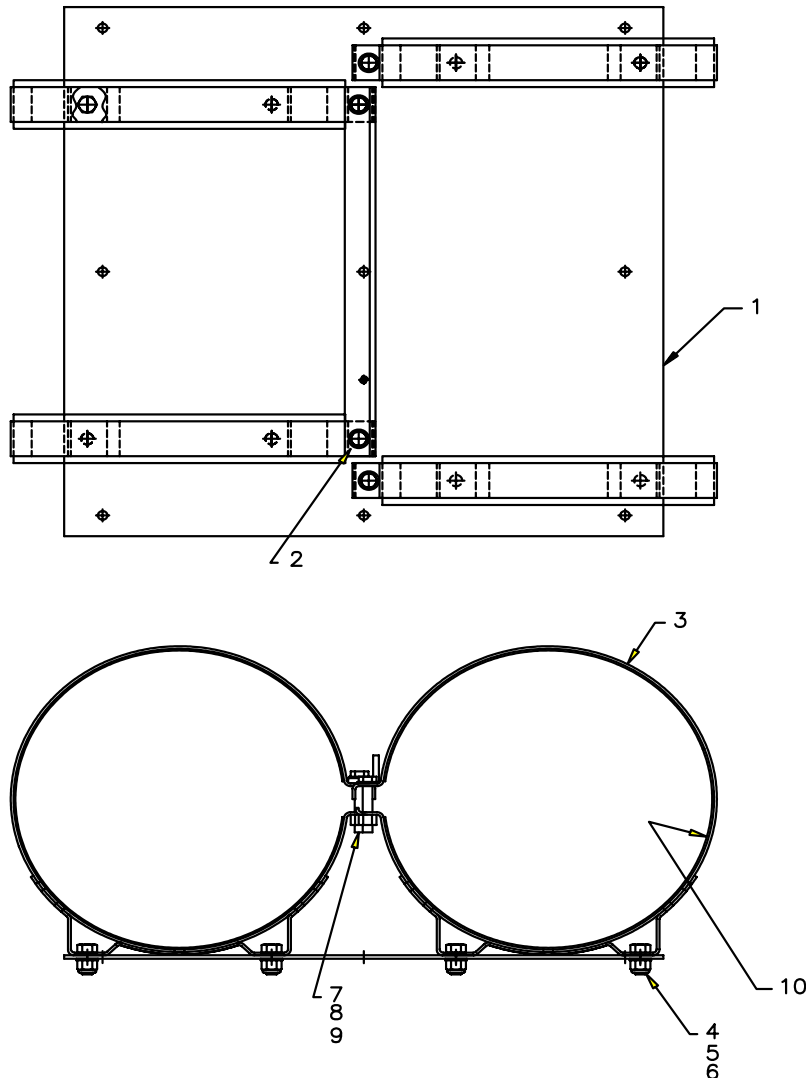
Panel Assembly
Figure 7-4



MOST 20-2B

Figure & Index No.	Part Number	FSCM	Description	Units Per. Assy.	SMR Code	Usable on Code
7-5	793854-001	75906	PLATE ASSEMBLY, MOUNTING- CYLINDERS.....	REF		
-1	793854-002	75906	. PLATE.....	1		
-2	793854-003	75906	. BRACKET, ANGLE.....	1		
-3	793810-001	55996	. MOUNTING. BRACKET CLAMP.....	4		
-4	MS35307-358	96906	. BOLT HEX HD - .375-16 x .75 LG.....	8		
-5	MS15795-814	96906	. WASHER FLAT - .39 dia.....	8		
-6	MS17830-6C	96906	. NUT LOCK, REG - .375-16.....	8		
-7	MS35307-342	96906	. BOLT HEX HD - .315-18 x 2.50 LG.....	4		
-8	MS15795-812	96906	. WASHER FLAT - .34 dia.....	8		
-9	MS17830-5C	96906	. NUT LOCK, REG - .312-18.....	4		
-10	8610K14	75906	. STRIP, RUBBER.....	4		

Table 7-5, BOM (Ref. Figure 7-5)

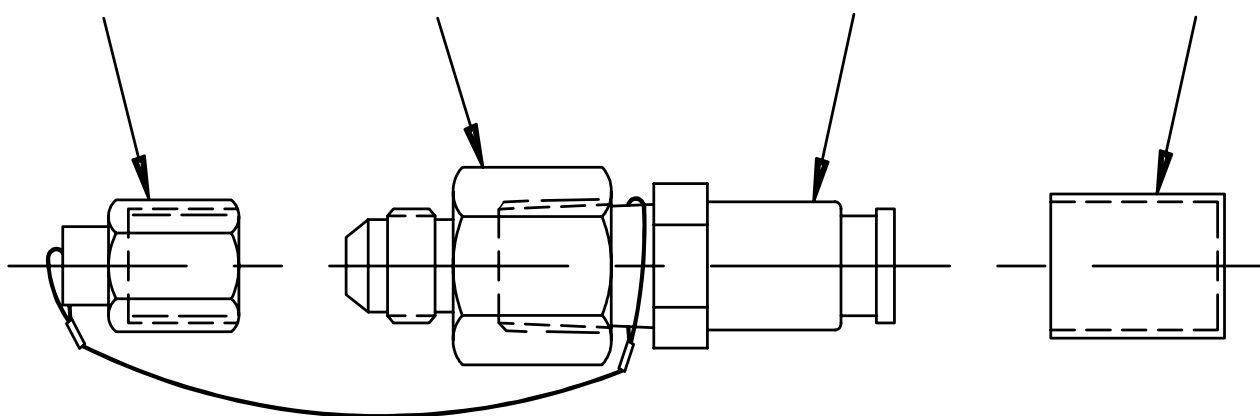


. Plate Assembly, Mounting-Cylinders.
Figure 7-5



Figure & Index No.	Part Number	FSCM	Description	Units Per. Assy.	SMR Code	Usable on code
7-6	790510-012	75906	. ADAPTER ASSEMBLY.....	REF		
-1	5-4GTX-SS	30780	. CONNECTOR, FEMALE.....	1		
-2	SS-QTM2-S-4PMK1	02570	. COUPLING, QC-STEM.....	1		
-3	78148-005	75906	. CAP, CABLE ASSY.....	1		
-4	SC-9/16	99017	. CAP, SLEEVE.....	1		

Table 7-6, BOM (Ref. Figure 7-6)



Adapter Assembly.
Figure 7-6.

SECTION VIII

8-1 TROUBLE SHOOTING

Problem	Probable Cause	Recommendation
1. Oxygen at input & output connector leaks or does not flow in & out of the system.	1. The connectors are not seated properly.	1. Disconnect and reconnect, seating firmly.
2. The input & output connectors can not be connected or disconnected.	2. Vent valve is not set to vent position.	2. Turn the valve to the vent position, See Figure 4-2 on page 8 for location.
3. Low pressure regulator valve not working.	3. Damaged or blocked.	3. Replace valve.
4. While not in use gauges slowly going down.	4. Leaks in system.	4. Check for leaks.

Table 8-1 Trouble Shooting Guide



SECTION IX

9-1 RECOMMENDED SPARE PARTS

Item	Part Number	FSCM	Description	Qty
1	793674-038	75906	GAUGE, PRESSURE 0-100 PSI	1
2	793674-039	75906	GAUGE, PRESSURE 0-5000 PSI	1
3	790510-012	75906	ADAPTOR ASSEMBLY	1
4	792975-001	75906	FLOWMETER ASSEMBLY	1
5	792980-001	75906	HOSE ASSEMBLY	1
6	582461-001	01JF9	EDGE CASTER KIT	1
7	793674-036	75906	VALVE, CHECK 10PSI	1
8	793674-044	75906	VALVE, CHECK 1PSI	1
9	793674-045	75906	VALVE, CHECK 5PSI	1
10	792993-001	75906	REGULATOR, PRESSURE 0-125 PSI	1
11	SS-4F-K4-40	18034	FILTER ELEMENT	1
12	6153	OUK87	CHECK UNIT, SCHRADER (TAG #C-1)	1
13	SS-QTM2A-B1-400K1	02570	COUPLING, QC (TAG # C-4)	1
14	791756-501	75906	VALVE, RELIEF 2360 PSIG	1
15	793503-602	75906	VALVE, RELIEF 60 PSIG	1
16	8026250	25515	DISC, BURST 3300 PSI (TAG # BD-1)	1

Table 9-1 Recommended Spare Parts List